

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 7933.

Port of Dundee. Date of First Survey 22 Nov. 1915 Date of Last Survey March 1916 No. of Visits 5  
 No. in Reg. Book 24 on the Iron Steel Sc. Sr. "Lady Dorothy" Port belonging to Glasgow.  
 Built at Dundee. By whom Dundee S.E. Co., Ltd., When built 1916.  
 Owners Nobels Explosives Co., Ltd., Owners' Address Glasgow.  
 Yard No. 274 Electric Light Installation fitted by The Sunderland Forge & E. Co., Ltd. When fitted 1916.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Multipolar Compound Wound dynamo direct coupled to open type Inverted Engine both by  
( Eng Cylinder 5" Dia 4" Stroke. 400 rpm 100 lbs steam at end stop valve. S.F.E. Co.,  
 Capacity of Dynamo 40 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Eng. Room Middle Platform Star Side. Whether single or double wire system is used Double.  
 Position of Main Switch Board close to Dynamo. having switches to groups Three of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each One fitted in entrance-  
hall with switches for side & Masthead lights also Compass.  
( Switches 5. in No.)

If fuses are fitted on main switch board to the cables of main circuit yes and on each auxiliary switch board to the cables of auxiliary circuits yes. and at each position where a cable is branched or reduced in size yes and to each lamp circuit yes.  
 If vessel is wired on the double wire system are fuses fitted to both flow and return wires or cables of all circuits including lamp circuits yes  
 Are the fuses of non-oxidizable metal yes. and constructed to fuse at an excess of 100% per cent over the normal current  
 Are all fuses fitted in easily accessible positions yes. Are the fuses of standard dimensions No. If wire fuses are used are permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit yes.  
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes.

Total number of lights provided for 64 at 16 c.p. arranged in the following groups:—

A	Eng Room aft-20	lights each of	16	candle power requiring a total current of	15.12.	Amperes
B	Midship & Nav. -25	lights each of	16	candle power requiring a total current of	14.-	Amperes
C	Ford - 12	lights each of	16	candle power requiring a total current of	6.72.	Amperes
D		lights each of	100	candle power requiring a total current of		Amperes
E		lights each of		candle power requiring a total current of		Amperes
2	Mast head light with 1	lamps each of	32 c.p. DF.	candle power requiring a total current of	2.24.	Amperes
2	Side light with 1	lamps each of	32 c.p. DF.	candle power requiring a total current of	2.24.	Amperes
2	Cargo lights of 6. 16 c.p. each.			candle power, whether incandescent or arc lights	Incandescent.	

If arc lights, what protection is provided against fire, sparks, &c. None Fitted.

Where are the switches controlling the masthead and side lights placed in entrance Hall.

## DESCRIPTION OF CABLES.

Main cable carrying	40.	Amperes, comprised of	7	wires, each	17	S.W.G. diameter,	".017	square inches total sectional area
Branch cables carrying	15.12	Amperes, comprised of	7	wires, each	20	S.W.G. diameter,	".0070	square inches total sectional area
Branch cables carrying	14	Amperes, comprised of	7	wires, each	21½	S.W.G. diameter,	".0050	square inches total sectional area
Branch cables carrying	6.72	Amperes, comprised of	1	wires, each	16	S.W.G. diameter,	".0032	square inches total sectional area
Leads to lamps carrying	2.24	Amperes, comprised of	1	wires, each	18	S.W.G. diameter,	".0018	square inches total sectional area
Cargo light cables carrying	3.36	Amperes, comprised of	1	wires, each	16	S.W.G. diameter,	".0032	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure rubber V.I.R. rubber - taped and lead covered in accommodation etc.,  
Pure rubber V.I.R. - taped and lead covered braided steel wire armoured and braided  
overall for main cables etc., and machinery spaces etc.,  
 Joints in cables, how made, insulated, and protected none

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances - Are all joints in accessible positions, none being made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage -

Are there any joints in or branches from the cable leading from dynamo to main switch board No.

How are the cables led through the ship, and how protected partly through engine and boiler room (A & B)  
remainder V.I.R. in iron pipe along bullwark tail starboard side.



**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible yes.

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture V.I.R. in Iron Pipe

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat A & P Cable.

What special protection has been provided for the cables near boiler casings A & P Cable.

What special protection has been provided for the cables in engine room armoured and braided cable.

How are cables carried through beams holes bushed with fibre. through bulkheads, &c. Watertight glands.

How are cables carried through decks W.T. Deck Tubes.

Are any cables run through coal bunkers No. or cargo spaces No. or spaces which may be used for carrying cargo, stores, or baggage Yes.

If so, how are they protected A & P Cables.

Are any lamps fitted in ~~coal bunkers~~ or spaces which may at times be used for cargo, coals, or baggage Yes.

If so, how are the lamp fittings and cable terminals specially protected by special Fittings.

Where are the main switches and fuses for these lights fitted top of Engine Room.

Where are the main switches and fuses for these lights fitted top of Engine Room.

If in the spaces, how are they specially protected -

Are any switches or fuses fitted in bunkers No.

Cargo light cables, whether portable or permanently fixed Portable. How fixed -

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel -

How are the returns from the lamps connected to the hull -

Are all the joints with the hull in accessible positions -

Is the installation supplied with a voltmeter yes, and with an amperemeter yes, fixed on Main S. Board

**VESSELS BUILT FOR CARRYING PETROLEUM.**

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas ✓

Are any switches, fuses, or joints of cables fitted in the pump room or companion ✓

How are the lamps specially protected in places liable to the accumulation of vapour or gas ✓

The copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

The foregoing statements are a correct description of the Electric Light installation fitted by us on this vessel and we declare that it is at this date in good order and safe working condition.

P. PRO THE SUNDERLAND FORGE & ENGINEERING CO, LTD, Electrical Engineers Date 3/4/1916

**COMPASSES.**

Distance between dynamo or electric motors and standard compass about 44 feet.

Distance between dynamo or electric motors and steering compass do.

The nearest cables to the compasses are as follows:—

Cable	Amperes	Distance from standard compass	Distance from steering compass
A cable carrying <u>6.84</u>	<u>12</u>	<u>12</u> feet	<u>12</u> feet
A cable carrying <u>.56</u>	<u>led into</u>	<u>feet from</u> standard compass	<u>-</u> feet from steering compass
A cable carrying <u>-</u>	<u>-</u>	<u>feet from</u> standard compass	<u>-</u> feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power yes.

The maximum deviation due to electric currents, etc., was found to be Nil. degrees on all courses in the case of the standard compass and Nil. degrees on all course in the case of the steering compass.

Builder's Signature Date 10 APR 1916

**GENERAL REMARKS.**

*The Electric Lighting Installation of this vessel has been fitted on board under special survey. Tested under full working conditions and found satisfactory, and eligible in my opinion to bear record of ELEC. LIGHT.*

*It is submitted that this vessel is eligible for*

**THE RECORD ELEC. light.**

*J.W.D. 12/4/16.*

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute